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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/045,438 | 11/07/2001 | Jonathan W. Lai | 530.001 | 4279 |
| 23598 | 7590 | 08/11/2004 | | |
| | | | EXAMINER | |
| | | | ELLINGTON, ALANDRA | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2855 | |

DATE MAILED: 08/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|---------------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/045,438 | LAI ET AL. | |
| | Examiner Alandra N Ellington | Art Unit 2855 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on amendment filed on 5/3/04.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-9 and 15-25 is/are pending in the application.

4a) Of the above claim(s) 10-14 is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1,15-17 and 19-22 is/are rejected.

7) Claim(s) 2-9,18 and 23-25 is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 03 May 2004 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|--------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input checked="" type="checkbox"/> Other: <u>Replacement drawing sheet</u> . |

DETAILED ACTION***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Daniels et al (6,389,886).

a. With respect to Claim 1, Daniels et al discloses a method to compensate for stress-induced deflection in a probe comprising the steps of determining an amount of stress-induced deflection of the cantilever 1 (col. 6 lines 28-45); and mounting the probe 17 so as to compensate for the stress-induced deflection (col. 6 lines 13-27 {Fig. 1}).

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 15 is rejected under 35 U.S.C. 102(b) as being anticipated by Quate (5,517,280).

a. With respect to Claim 15, Quate discloses a method of compensating an amount of static deflection associated with at least one probe of a first planar array of probes comprising the steps of directing a

beam of light towards a first probe of the first array of probes; reflecting the beam off the cantilever 81,82 of the first probe; determining a first amount of static deflection based on the reflected beam; and selecting a first probe compensation piece 74,80 based upon the first amount of deflection (col. 5 lines 5-15, 63-67, col. 6 lines 1-8 {Fig. 8}).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 16, 17 and 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Quate (5,517,280) in view of Daniels et al (6,389,886).

a. With respect to Claim 16, Quate discloses the claimed invention except for the step of mounting the first microprobe on the first selected microprobe compensation piece. Daniels et al teaches a compensation piece 6,7 mounting a probe 17 (col. 6 lines 13-15 {Fig. 1}). It would be obvious to one having ordinary skill in the art at the time the invention was made to modify Quate with the teaching of Daniels et al to include a mounting means to mount microprobes to a selected compensation piece for the purpose of controlling deflection of the probe in order to maintain the interaction stability (see Daniels et al, col. 6 lines 13-48).

b. With respect to Claim 17, Quate discloses the method with the step of mounting each of the probes of the first planar array of probes on a

compensation piece 74,80 having the same shape as the first selected probe compensation piece 74,80 (col. 5 lines 5-15, 63-67, col. 6 lines 1-8 {Figs. 7A and 8}).

c. With respect to Claim 19, Daniels et al teaches a wedge 6,7 as the compensation piece ({Fig. 1}).

d. With respect to Claim 20, Daniels et al teaches a wedge 6 with a base 7 and a mounting surface defining an angle (col. 6 lines 13-25 {Fig. 1}).

e. With respect to Claim 21, Daniels et al teaches the step of computing the angle based on the determining step (col. 6 lines 28-65).

f. With respect to Claim 22, Quate discloses the step of integrally forming an array of probes from a single wafer 24 prior to the directing step (col. 3 lines 65-67, col. 4 lines 1-4).

Allowable Subject Matter

6. Claims 2-9, 19 and 23-25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: The reasons for the indication of allowable subject matter is based on the inclusion of:

a. In Claim 2, selecting a compensation piece based upon the amount of stress-induced deflection.

- b. In Claim 18, mounting each of the microprobes on a corresponding compensation piece having a shape selected according to a corresponding amount of static deflection.
- c. In Claim 23, mounting each of a second planar array of microprobes on a corresponding compensation piece shaped according to the first selected microprobe compensation piece.
- d. In Claim 25, mounting the first array of microprobes on a X-Y translating stage configured to translate in a plane parallel to the first array prior to the directing step; and removing the first array from the X-Y translating stage.

Response to Arguments

8. Applicant's arguments with respect to claims 1-9 and 15-25 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Takeshita et al (6,509,969) discloses a system for inspecting and/or processing a sample.
- b. Anderson (6,025,719) discloses a probe with compensating means.
- c. Lee (6,604,395) discloses a probe bender.
- d. Tohda et al (5,468,959) discloses a probe microscope.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alandra N Ellington whose telephone

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number is (571) 272-2178. The examiner can normally be reached on Monday - Friday, 7:30am - 4:00pm.

11. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alandra Ellington
Art Unit 2855

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(AU)


EDWARD LEFKOWITZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2000